GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
STARRED QUESTION NO – 289
ANSWERED ON 27.03.2025

NUCLEAR MISSION

*289. SHRI BRIJ LAL:

Will the PRIME MINISTER be pleased to state:

(a) the manner in which "Nuclear Mission" announced in the Union Budget 2025-26 will transform India's energy landscape;

(b) the key objectives of Research and Development (R&D) in Small Modular Reactors (SMRs);

(c) the manner in which it would contribute to the country’s energy security; and

(d) the manner in which the recently launched Nuclear Energy Mission would strengthen country's commitment to clean and sustainable energy solutions?

ANSWER

THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES AND PENSIONS AND PRIME MINISTER’S OFFICE (DR. JITENDRA SINGH):

(a) to (d) A statement is laid on the Table of the House.

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Government of India
Department of Atomic Energy

STATEMENT REFERRED TO IN REPLY TO PARTS (A) TO (D) IN RESPECT OF RAJYA SABHA STARRED QUESTION NO. 289 FOR REPLY ON 27.03.2025 REGARDING "NUCLEAR MISSION" BY SHRI BRIJ LAL.

(a) It is envisaged that nuclear capacity addition till 2030 will come from projects which has already gone under construction phase. By 2029-30, the installed capacity of nuclear in the country will reach to 13 GW from present 8.18 GW, which will further enhance to 22.5 GW once all sanctioned projects are completed (by 2032). All these are being implemented by PSUs under DAE.

The budget projections of at least 100 GW of nuclear capacity to achieve country's goals considering factors like emission, cost, land and water, which is a massive expansion and will require nuclear power sector to grow at a much faster pace. This has necessitated participation of domestic private sector into nuclear power operations, which is expected to bring private investments as well in the nuclear sector. The transformation of allowing private participation into nuclear sector is expected to gear up a rapid scale-up of nuclear capacity, for which legislature changes are being pursed, to facilitate an active participation and partnership of Public and Private Sector in Nuclear.

(b) Nuclear energy in expected to cater a host of end-uses beyond base-load electricity supply to national grid, viz. captive power and process heat to industry, electricity and / or fresh water (through sea water nuclear desalination) in isolated grids, and clean hydrogen for hard-to-abate sectors. Towards this it has been announced to partner with private for R&D on SMRs and newer technologies, with the objectives to build suitable size (power level) of nuclear energy system, fit for the above purposes.

While 2 designs of PWR-based designs are being considered under BSMR (Bharat Small Modular Reactor); a Gas-cooled Micro Modular Reactor (GMMR) (with the purpose of clear H2 production) is proposed. The proposal is to build "Prototype" plants for BSMR; and a proof-of-concept plant for GMMR as it involves considerable design efforts – both in terms of design and manufacturing and regulatory processes.

(c)&(d) Beyond 2030, there are 2 national goals for the country – "Energy Independence by 2047' and 'Net Zero by 2070'. The optimum energy mix for the future needs to leverage all available energy sources to ensure quality and reliable electricity for nation's energy

security at a least-cost to the consumer. Nuclear as complimentary source to Renewable energy has multiple advantages which adds to grid stability, balancing and reducing the need for energy storage system, which inturn helps in reducing the need for critical minerals required for battery.

The “clean” credentials of nuclear is proven. Compared to coal, nuclear has 70 times less greenhouse gas emission and at par with the renewable energy sources. In addition, nuclear helps in reduction of gases causing air pollution.

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